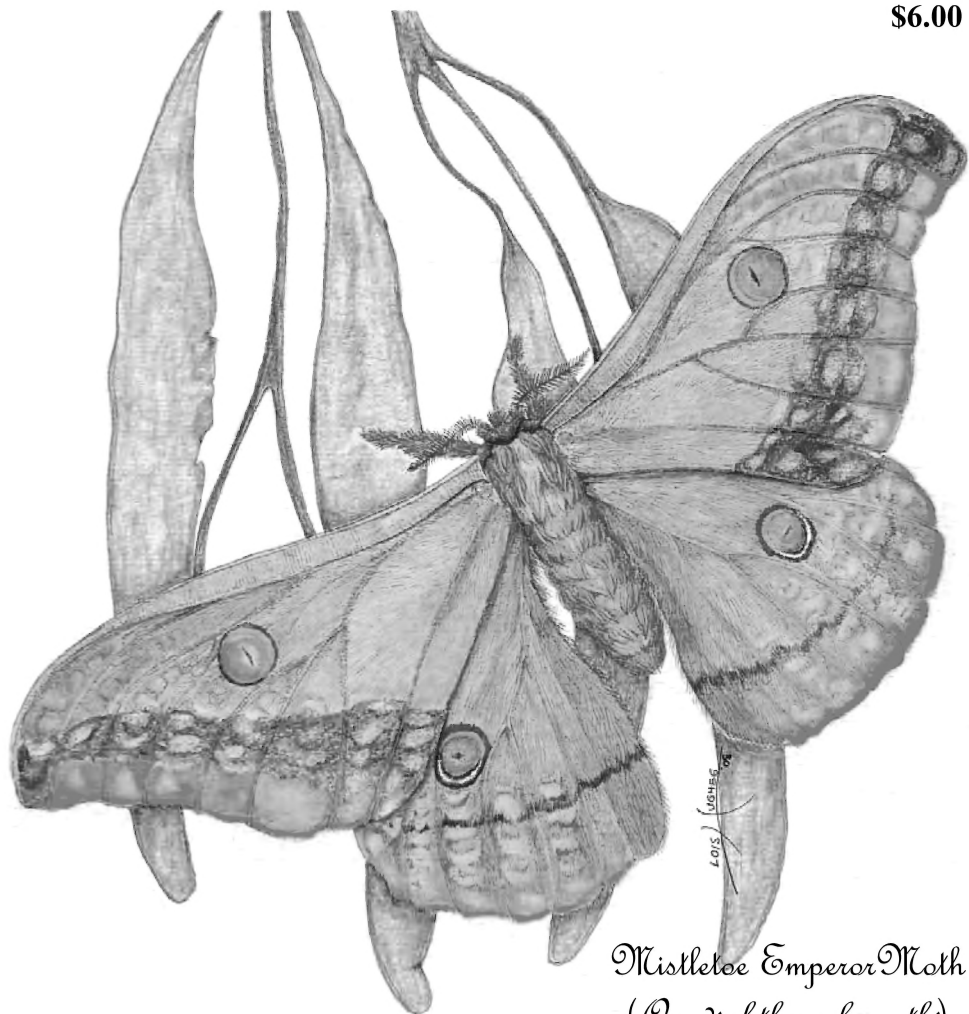


\$6.00



Mistletoe Emperor Moth
(*Opodiphthera loranthe*)

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CLUB PLANNING AND ORGANIZING GROUP - 2008

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PLANNING AND ORGANIZATION MEETINGS

A quarterly meeting is scheduled in order to plan club activities and the magazine.
See BOIC Programme.

CONTACT ADDRESS AND MEMBERSHIP DETAILS

PO Box 2113, Runcorn, Queensland 4113

Membership fees are \$20.00 for individuals and \$25 for schools and organizations.

AIMS OF ORGANIZATION

- To establish a network of people growing butterfly host plants;
- To hold information meetings about invertebrates;
- To organize excursions around the theme of invertebrates e.g. butterflies, native bees, ants, dragonflies, beetles, freshwater habitats, and others;
- To promote the conservation of the invertebrate habitat;
- To promote the keeping of invertebrates as alternative pets;
- To promote research into invertebrates;
- To encourage the construction of invertebrate friendly habitats in urban areas.

MAGAZINE DEADLINES

If you want to submit an item for publication the following deadlines apply:

March issue – February 21st

June issue – May 21st

September issue – August 21st

December issue – November 21st

COVER

Mistletoe Emperor Moth (*Opodiphthera loranthi*). Painting by Lois Hughes



FROM THE PRESIDENT

The BOIC has conferred life membership to Helen Schwencke in recognition of her vital initiatives in its establishment and organisation for 12 years. Elsewhere in this publication you will read a brief history of the development of the Club's newsletter, which has been penned by Lois Hughes.

I thank Lois for her continued active work for the BOIC. Her artwork has been appreciated for many years but with the magazine now printed in colour she has unleashed her talents to produce beautiful paintings for the cover. The latest, which you will have already studied, is impressive.

Through Lois' love of art and her detective work we welcome two rather special members: Charles McCubbin is a well-known artist particularly to those familiar with his classic book "Australian Butterflies" published in 1971 and Densey Clyne is also well known as a naturalist, photographer and publisher.

Often, in discussions with entomologists, I hear of shortages of experts in many fields as older specialists retire or die. This was recently reinforced by Susan Wright of the Queensland Museum in her comments on the mystery ants from our last edition (see page 34) but I am encouraged by the fact that at least three youngsters have joined the BOIC in the last year. One of these, Ben Jacobs, has become the youngest contributor to our publication with his article on a small praying mantis.

Thank you again to the various contributors of articles for this edition and to Daphne for her patient editing.

Best wishes

Ross

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The Mistletoe Emperor Moth (*Opodiphthera loranathi*) (Lucas) (Lepidoptera: Saturniidae)

The family Saturniidae contains some of the most interesting and spectacular moths in the world, including the well known Asian Atlas moths (*Attacus* spp.) and our own huge, tailed Hercules Moth (*Coscinocera hercules*) of North Queensland rainforests. The familiar commercial Silkworm (*Bombyx mori*) is in a related family, both of which come within the superfamily Bombycoidea, as do the antherlids, as discussed previously by Peter Hendry in issue number 50, September 2008.

In the 1960's, whilst living in Sydney, I often came across a large saturnid which was a local icon amongst the amateur naturalists. This was the Emperor Gum Moth now *Opodiphthera eucalypti*, but known as *Antheraea eucalypti* at that time! Occasionally a larger, more showy species *O. helena* would turn up and the attractive larvae of both of these species were eagerly sought after as pets! The large caterpillars of both species were mostly found on the foliage of various eucalypts.



Mistletoe Emperor Moth (*Opodiphthera loranathi*) male
Photo by Julian Bentley

However, on one occasion, whilst walking in my local bushland, I found a dead specimen of a similar looking, large reddish-brown saturnid, that I couldn't identify. It wasn't until the publication of Ian Common's "Moths of Australia" in 1990 that I recognized it as the mistletoe feeding species *O. loranathi*, although I thought that the black and white photograph didn't do it justice!

I have since found the moth in various locations in Southeast Queensland where there are significant amounts of pendulous mistletoes. The habitats vary from savannah woodland to dry sclerophyll open forest to wet sclerophyll closed forests but not specifically in rainforests. Lane and Edwards (2005) list the mistletoe hosts as *Amyema miquelii*, *A. pendula* and *A. quandang* – the first two of which are parasitic on *Eucalyptus* species and the third on various wattles, especially Brigalow (*Acacia harpophylla*). Richard Zietek (pers. comm.) also reports the moth larvae on *A. miquelii*. (See Moss, 2005, for a fuller account of these mistletoes and their host trees.)



In March 2003, Ross Kendall and I found several final instar larvae on the pendulous “Gum-leaved Mistletoe” *Muellerina eucalyptoides* growing on the “Broad-leaved Apple” *Angophora subvelutina* at Bolivia Hill, south of Tenterfield, NSW. An adjacent tree had a cluster of old spent cocoons attached to the butt of a dead mistletoe just above its haustorial attachment. Common (1990) remarks “The empty cocoons are used as pupation sites by the larvae of *Ogyris* butterflies that also feed on the mistletoe.” This was a good site for both *Ogyris abrota* and *O. olane* which we also found feeding on the same mistletoe although I don’t recall any butterflies emerging from the empty moth cocoons.



Opodiphthera loranathi pupal cluster
Photo by Peter Hendry

Common (1990) states that “pupation occurs in tough, oval cocoons spun in a bunch together on the butt of the mistletoe, but arranged so that each moth can escape successfully at eclosion.” Our findings confirm this observation (see illustrations cocoons). He further observes that “the larvae are gregarious and several usually occur on the one clump of mistletoe, often defoliating it. Their presence on mistletoes growing high in the canopy of eucalypts can usually be detected by the presence of numerous large faecal pellets on the ground beneath.”

The larvae (several instars of which are well illustrated by Lane and Edwards, 2005) differ from most other saturnids (exception being the closely related *Opodiphthera*

carnea) by having thicker, black coloured scoli (small dermal turrets or “lumps”) topped with white setae (hairs) arranged in rows within black segmented bands or rings, around the body at roughly 1cm intervals, i.e. one ring per segment (see illustration final instar larvae). The background colour of the earlier instars is brown whereas that of the final instar is a dull khaki or olive green. They grow to a length of about 110mm before pupation. The adult moth has a wingspread of approximately 200mm (see illustration herein).



Opodiphthera loranathi larvae
Photo by John Moss





Amyema miquelii – Photo by Ross Kendall

Common (1990) gave the distribution of this species as from Cooktown, North Queensland to Mt. Keira, just south of Sydney. However, Lane and Edwards (2005) have confirmed that there are two similar species (*O. loranathi* and *O. carnea*) with distributions that may eventually be found to overlap. *O. loranathi* is now considered to occur from just north of Mackay, Qld. south along the coast and tablelands to just south of Eden, NSW and also at Canberra, ACT. *O. carnea*, the sibling species, has more of a western, semi-arid country distribution and is known from parts of the Northern Territory, and in Queensland “from Lakefield National Park (and) Cooktown, then south through the western Atherton Tableland to Townsville and inland to Forty Mile Scrub, from near Georgetown and Mt. Surprise, the White Mountains and from an area 96

km west of Bowen” (Lane and Edwards, 2005).

There is at least one other mistletoe feeding species, viz. *O. engaea*, an inland species from south-western Queensland and north-western N.S.W. Common (1990) states that “its larvae are also gregarious and (also) spin their cocoons on the butt of the mistletoe on which they fed.”

O. loranathi is certainly one of Australia’s more interesting moth species and there is still much to learn about its biology and that of its siblings. A related saturnid genus *Syntherata* is soon to be expanded with descriptions of some new species, in an upcoming monograph by club members David Lane and Ted Edwards. I am looking forward to its impending publication.

Acknowledgements: I would like to thank Richard Zietek for providing the *O. loranathi* cocoon cluster for photography and David Lane for general discussions on the species.

John T. Moss

References:

Common, I.F.R. (1990). Moths of Australia. Pub.:Melbourne University Press.



- Lane, D.A. and Edwards, E.D. (2005). The status of *Opodiphthera carnea* (Sonthonnax) and *O. loranthe* (Lucas) (Lepidoptera : Saturniidae) in northern and eastern Australia. *Australian Entomologist* 32(2)55-64.
- Moss, J.T. (2005). Butterfly Host Plants of south-east Queensland and northern New South Wales. Second (revised) edition Pub.: BOIC Inc.

ITEMS OF INTEREST

What's in a name?

Much discussion occurred over the last few months regarding the “naming” of our newsletter and comments from the members have been interesting. Committee members generally favoured “Metamorphosis (Australia)”. Other members rarely get a “behind-the-scenes” look at the “workings” of the club but only see the end result, our newsletter/magazine, so I have written a quick review of our past. Helen Schwencke had an idea that grew until she felt the time was right to share this with like-minded enthusiasts who had a desire to share their enthusiasm with others. Much like a butterfly selecting a suitable host plant and depositing an egg in a place where it could hatch, feed and grow to maturity, that “egg” Helen deposited was fertile. The B.O.I.C. was “hatched” in 1994.

For the first year, the means of communication was a newsletter of a couple of A4 pages stapled together. February 1996 saw the first issue (No. 1) of our newsletter in booklet form, A5 size and consisting of 6 pages. On the cover was what became affectionately known as the big “B”! Issue No. 2 grew to 13 pages and had a couple of illustrations with some computer generated images of butterflies. Issue No. 3 saw the first proper illustrations used and the big “B” remained until Issue No. 17. Since then, a “creature” has adorned the cover, the subject of which was the Creature Feature and, if appropriate, accompanied by a Plant Profile. Just as a caterpillar feeds until its body has been filled to capacity, rests as a new skin forms beneath its soon to be shed old skin before resuming its growth, so the club and the committee members have grown collectively and individually. Sometimes the new caterpillar skin is so different from its former skin, that it is unrecognizable, especially to the uninformed. Likewise, our newsletter, has been transformed into a 36 page, glossy, colourful and very informative magazine.

Change can be disturbing and cause resistance, but the caterpillar must surrender itself and all that made it a caterpillar, to be re-made, inside the chrysalis, into the beautiful butterfly it was destined and intended to be. I believe that the changes that have occurred over time have touched all our lives but the vision remains the same and the passion to pursue it unabated. The name “Metamorphosis” epitomizes our journey as a club and the many collective and individual pursuits that have resulted



because of our shared interests and increased knowledge. Come fly with us as we celebrate our past and embrace our future.

Lois Hughes

Life Cycle of the Leaf-Beetle *Plagioderma amphipennis* (Lea)

Perhaps it was a little bit of serendipity that the life cycle of this somewhat pesky little leaf-beetle was discovered.

My main intention in my garden was to have a selection of plants in the Salicaceae family which would attract the Bordered Rustic butterfly *Cupha prosope prosope*. I achieved that goal. However a little tag-along beetle also made its appearance in my Brisbane garden. Unfortunately it soon became apparent that the beetle could easily

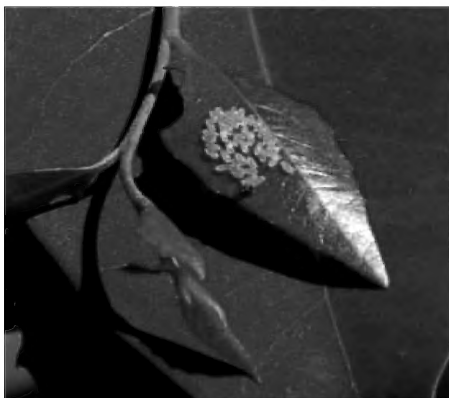


Fig. 1. Egg cluster on leaf of *Scolopia braunii*

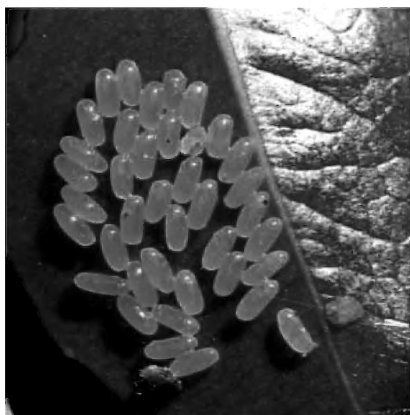


Fig. 2. Close-up of egg cluster

out-compete the much preferred Rustic butterfly for those highly desirable fresh shoots of the foodplants. To this day the little beetle has foiled all my attempts at eradication (my entomological curiosity was tempered when I discovered that, left to their own devices, they are capable of defoliating certain foodplants ultimately leading to the death of the foodplant) and I have a rather persistent colony of beetles.

The adults hibernate during the colder months when fresh shoots of the foodplants are not available.

Occasionally a specimen can be found under a leaf but most are well hidden. Come spring and as soon as the foodplants start to grow the adults also become active once more. Maybe both the beetle and foodplants respond similarly to cooling or warming of the seasons, alternatively fresh shoots of the foodplants may produce a chemical signal which the beetle can detect.

The foodplants are all members of the Salicaceae family with *Scolopia braunii*, *Xylosma terraereginae*, *Flacourtia inermis*, *F. territorialis* and *F. sp.*(Cape York) all being used.





Fig. 3. Larvae on *Scolopia braunii*

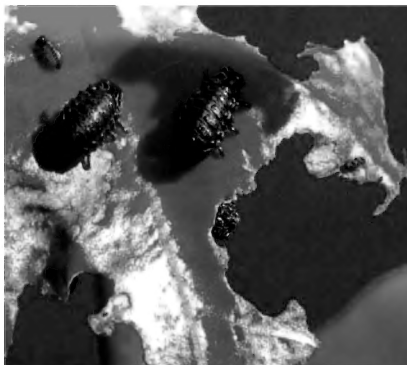


Fig. 4. Mature larvae on *Scolopia braunii*

Interestingly *F. indica* is not used but the Rustic doesn't use this plant either. The larvae use only new growth while the adults will eat the semi-hardened leaves. All the leaves of *X. terraereginae* are sufficiently soft for the adults to defoliate the plant.

Eggs are laid on the fresh shoots, usually on the undersides of the leaves, in groups of 10 to 20 (see Figures 1 and 2). They are approximately 1mm long and have a pale yellow appearance. The eggs hatch in 2 to 3 days with the young larvae gregariously eating the leaf they hatched on (see Figure 3 for typical eating pattern).

Within about 7 days the larvae are fully grown (see Figure 4) at approx. 7mm long, are black in colour and have dispersed over the whole shoot they were laid on. The pupae (see Figures 5 and 6) are only rarely found, usually under a leaf or under bark. Possibly most larvae leave the plant and pupate in the ground litter. The adults emerge after 4 days in January, are approximately 5-6mm in diameter and are a polished coppery-black colour (see Figure 7).

Interestingly they appear to have very few predators in the garden allowing their numbers to increase rapidly. However in forest areas they are very rarely seen. I have seen paper wasps and ants attack the larvae while the adults are killed by predatory bugs. Adults feed openly and normally remain on the foodplant often in large numbers. All *Chrysomelid*

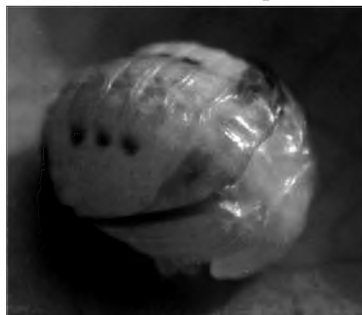


Fig. 5. Close-up of pupa



Fig. 6. Pupa and pupating larvae



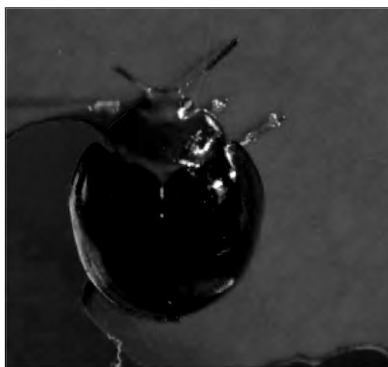


Fig. 7. Adult beetle *Plagioderia* sp.

beetles have secretory glands which assist in deterring predators. In addition the adults readily drop to the ground if disturbed thus helping to avoid predators.

Acknowledgement – I would like to thank Chris Reid of the Australian Museum for beetle identification and proof reading of the manuscript.

Dennis Bell

Photos by Dennis Bell

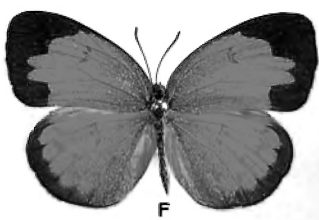
Life History Notes on the Scalloped Grass-yellow, *Eurema alitha* (C&R Felder 1862) Lepidoptera: Pieridae

During the first week of April 2008 a field trip involving five BOIC members was undertaken to Stanage in Central Coastal Queensland (See introductory article written by Graham Forbes, BOIC Newsletter Issue No. 49).

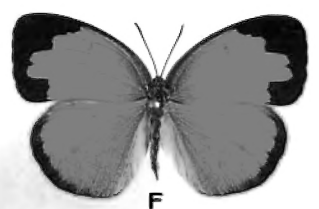
Graham mentioned in his article the amazing number of freshly emerged grass-yellow butterflies on the wing. A number of specimens were netted to confirm the species. It was noted that the majority of the specimens captured were of the very common species *Eurema hecabe* (Large Grass-yellow). However, flying amongst this species were also numerous *Eurema alitha* (Scalloped Grass-



Eurema alitha (Scalloped Grass-yellow)

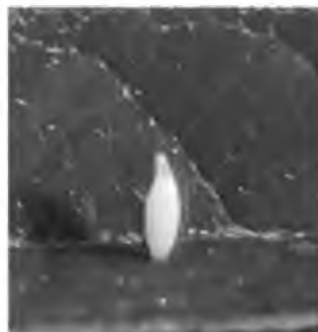


Eurema hecabe (Large Grass-yellow)



yellow). The adults of both species were encountered throughout the grassy understorey of patchy dry vine scrub thickets on the headlands where the inconspicuous host vines were established growing low amongst the grasses and other ground cover vegetation. Adults of the two species were also encountered in the grassy, more open woodlands located nearby.

At around midday a female was observed on the leeward side of the headland (protected from the quite gusty easterly wind!), ovipositing on a known host plant *Glycine tabacina* (A.J. King, in Braby, 2000).



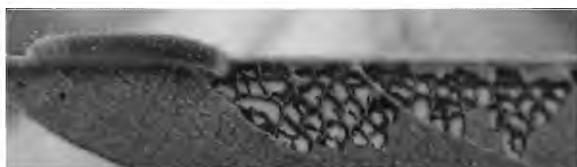
Egg of *Eurema alitha*

Typically the flight pattern was similar to other females of the *Eurema* genus. The female was observed fluttering slowly, close to the ground amongst grass stalks where the thin twining host vines were established. Once a suitable position was located she settled on the host plant. With her wings closed the abdomen was curled onto the host plant where a single egg was laid. The female repeated the process several times laying several eggs, chiefly on fresher leaves of the thin-stemmed host plant. It was confirmed that the eggs are laid on either side of the leaves. (A.J. King, in Braby, 2000). Several eggs were collected for further study.

They are pale yellow approximately 1.3mm high x 0.5mm wide.

Soon after the first instar larvae emerged, the eggshells were consumed (as per A.J. King observation in Braby 2000).

The smaller larvae rest on the underside of the leaves and graze on the softer leaf tissue, leaving most of the coarser veins and the upper epidermis intact. As the larvae progress in size they typically feed from the outer edge of the host leaf.



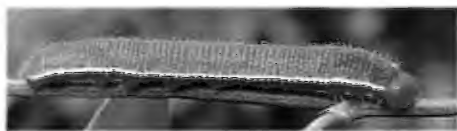
Early instar larva of *Eurema alitha*

The larvae are cunningly camouflaged on the host plant making detection difficult. They move very sluggishly. Although a considerable amount of time was spent observing several larvae in captivity, I rarely

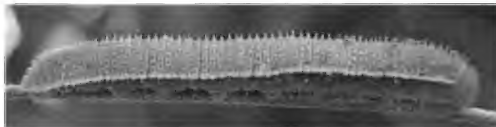
saw them feeding. They feed during daylight hours as do other Australian *Eurema* larvae. The larva pictured completed five instars. Both the larvae and pupae of *E. alitha* have a bluish grey appearance compared with the green of *E. hecabe*, reflecting the colour of the host vine.



The life cycle duration from egg to pupa (raised in captivity at Beaudesert in SE Queensland during April/May 2008) was 32 days; the egg 4 days, larva 18 days and pupa 10 days respectively.



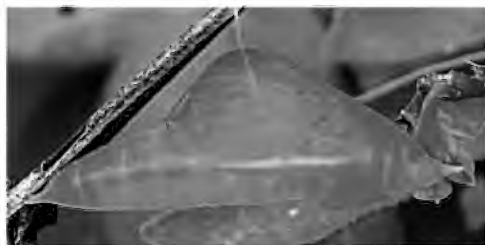
Eurema hecabe final instar larva



Eurema alitha final instar larva (length 24mm)

The most accurate way to identify the adults of the two species is to raise them on their specific host plants. The only known documented host plant for *E. alitha* in Australia is *Glycine tabacina*.

However, most adults of *E. alitha* can generally be placed by the definite scalloping along the inside edge of the black margin of the hindwing upperside and the two yellow equidistant indentations along the black margin of the forewing upperside. Note: some adult females of the Large Grass-yellow (*Eurema hecabe*) may also have slight scalloping along the inside edge of the black margin of the hindwing upperside, but is generally not as pronounced (as per the female *E. hecabe* pictured). The adults of *E. alitha* are generally a brighter, richer yellow than *E. hecabe*.



Eurema hecabe pupa



Eurema alitha pupa (length 18mm)

Even though *Eurema alitha* can be locally common there is little doubt that observations of the adults have been overlooked due to the similarities of the two species in size, coloration and flight behavior and the absence of this species from the well known books by Common and Waterhouse, 'The revised edition Butterflies of Australia' (1981) or the 'Butterflies of Australia field edition' (1981). It has since been included in both books by M.F. Braby 'Butterflies of Australia – Their Identification, Biology and Distribution' (2000) and 'The Complete Field Guide to Butterflies of Australia' (2004).

Distribution records for *E. alitha* (particularly in SE Queensland) may possibly be extended with further observations or collecting where the *Glycine* host vines are established. Newly emerged adults were also found commonly during April 2008



northwest of Childers near the Perry River at approximately 9km NW of 'One Tree Hill', Goodnight Scrub NP (A.F. Atkins, W. Jenkinson, J.T.Moss). The species was previously known from Raglan Creek 65 km south of Rockhampton (E. Scheermeyer) approximately 200 km further north (Braby 2000). A record from Buderim SEQ (J. Neilson, per comm.) needs confirmation.

Wesley Jenkinson

Photos by Wesley Jenkinson

Reference: Braby, M.F., 2000. Butterflies of Australia – Their Identification, Biology and Distribution. vol one. CSIRO Publishing.

Further notes on the Scalloped Grass-yellow(*Eurema alitha*) and its hostplants



Glycine tabacina

Our club's "Green Book": Butterfly Hostplants of south-east Queensland and northern New South Wales currently lists (as asterisked on p.28) only *Glycine tabacina* (fam. Fabaceae) as a host for *Eurema alitha*. However, due to a transposition error the "reverse" listing of *E. alitha* hostplants (on p.46) also includes *G. clandestina* and *G. tomentella* (hosts for the Common Grass Blue, *Zizina labradus*!) At this time these two are "possible" hostplants and further observations should elucidate whether they are also utilized by the butterfly.

The distribution of *G. tabacina* extends through southern Queensland into northern New South Wales, so potentially the butterfly could be more widespread than the new southern limit at approximate latitude Bundaberg (see W. Jenkinson's article this issue).

Club member Alan King, who initially discovered *E. alitha* on *G. tabacina* at Townsville (Braby, 1997) has since found that larvae go through on two related trifoliate leaved legumes viz. *Galactia muelleri* and *G. tenuiflora* (fam. Fabaceae). The latter has a wide distribution throughout Queensland. Alan says that these are the preferred hostplants in the Townsville area. As in *G. tabacina*, these species have leaflets which are glaucous-grey on the underside (A.J. King, pers. comm.).



Graham McDonald, another club member, recently observed (autumn 2008) a large *Eurema* species female ovipositing on the legume *Goodia lotifolia* (fam. Fabaceae) at Mudgeeraba SEQ (G. McDonald, pers. comm.). It is quite possible that the species was *E. alitha* as that would be consistent with the plant family preference, although *E. hecabe* also uses hostplants in the family Fabaceae. However, whereas *Glycine* and *Galactia* are purple, mauve or pink flowered small vine/scramblers, *Goodia lotifolia* (sometimes called “Clover-leaved Poison”!) is a trifoliate leaved shrub up to 3 metres tall with bright yellow flowers.



Galactia tenuiflora

Other club members are encouraged to look for this butterfly especially where its hostplants are found. It is not easy to recognize or distinguish from *E. hecabe* (the Common or Large Grass-yellow) at rest, let alone on the wing. The definitive upper-side wing markings (as mentioned in the previous article, by Wes. Jenkinson) are difficult to see unless the resting butterfly co-operates by opening its wings. Sometimes it is possible



Goodia lotifolia

to see the characteristic markings from the side if the sun is shining strongly through the closed wings. The only reliable way is to catch the butterfly, cool it down in the refrigerator to prevent damage and pare open the wings carefully with flat-bladed forceps. If it is not required as a voucher specimen, the butterfly can then be safely released.

John Moss

Photos by Glenn Leiper

Reference: Braby, M.F., 1997. Occurrence of *Eurema alitha* (C. & R. Felder) (Lepidoptera: Pieridae) in Australia and its distinction from *E. hecabe* (Linnaeus). *Aust. J. entomol.* 36:153-157.



Studies of the eggs and larvae of the Richmond Birdwing butterfly (*Ornithoptera richmondia*)

Under an endorsement on Permit No. WISP00582002, issued to Dr. Don Sands on behalf of the Richmond Birdwing Recovery Network, to handle immature stages of the Birdwing Butterfly, I have studied eggs and larvae of the Richmond Birdwing butterfly.



Hatching larva



Newly hatched caterpillar eating eggshell and showing osmeterium.

The egg is 2.5 mm in diameter, generally glued to the underside of the leaf of the food plant. It is bright yellow in colour with a

granular, sometimes lumpy surface. The egg is slightly flattened where it is stuck to the leaf, the glue forming a meniscus about the egg which is easily seen with a little magnification. It seems likely that the egg is formed with this flattened area so as to facilitate its attachment to the leaf. That butterflies can orientate eggs before

depositing is clear – think of the eggs of the Pieridae glued to a leaf on end, the correct way up.



Newly emerged larvae displaying a strange orange colour which changes to black within an hour or two.

As the embryo develops the yellow colour fades and, on some eggs, a light covering of fungus appears.



After about two weeks the caterpillar appears as a black spot in the centre of the egg. With careful observation, and a lot of luck, the caterpillar may be seen moving. Any sign of movement indicates that the caterpillar is about to hatch.

With further observation, the caterpillar can be seen eating its way out of the egg. It then crawls out and rests for about an hour before turning round and eating the eggshell and the glue - its first meal. Some of the caterpillars are orange in colour changing to jet-black within the hour. The whole of the eggshell is not always eaten. If irritated, the newly hatched caterpillar will protrude its osmeterium.

The caterpillar is 4mm long when it hatches but radically different from later instars, being covered with sharp pointed branching black spines. These spines remain until the first instar when they are replaced with the soft, gently curving spines tipped with red generally associated with Birdwing caterpillars.

The question is, why this great change? This author's hypothesis is that the spines are protective. It is well known that Birdwing larvae are sometimes cannibals, so these spines could be a protection for the very small and slowly moving larvae.

This author has noticed spines on early instars of other species, the Orchard Swallowtail for instance. These spines generally become smaller during later instars and generally disappear by about the third or fourth instar.



A point of interest - Birdwing eggs appear spherical at first glance, but of course they are not. They have a flattened area which can be glued to a leaf. This means that the egg has to be orientated before it is deposited on to a small dab of glue on a leaf. Over the years I have seen two eggs which were incorrectly orientated, neither had been fertilised. This is a photograph of one of them, which shows the large flat area.

Photos by Hilton Selvey

Hilton Selvey

Fully grown at 1 cm!

The smallest praying mantis in the world, at a mini 1cm in length fully grown, is the Brown Ground mantis (*Bolbe pygmaea*) - a native to Australia. It was described in 1871 and is unpredictable, being small and fast. The Brown Ground mantis mainly eats midges, small moths etc. Swaying its little arms left and right, like most small breeds of mantis when confronted, can deter or confuse a predator and the



Bolbe pygmaea - Photo by Ben Jacob



mantis's speed allows its getaway. Light brown coloration over its whole body with a horizontal stripe across the eyes and through the ocelli helps it blend in with its background. Unlike the largest mantis in the world - the Malaysian Feathered mantis - the odds of the Brown Ground mantis being attacked by a bird would probably be very low. Its antennae are long and curled at the tip and can sense vibrations around it to track prey.

Did you know? *Statilia apicalis* is a far-ranging species of mantis found in Asia, Africa, and Oceania. *S. apicalis*' range includes Australia, New Guinea, New Caledonia, India, Sulawesi, China, Sumba, Timor, the Philippines, Ghana, Guinea, and the Congo River area.

Ben Jacob

Ed.: New member, 13 year old Ben, is a first time contributor. We look forward to hearing more from him.

Now available: a field key to the lycaenid butterflies of the Top End and Kimberley

Franklin D.C., Bisa D. 2008. Field key to the lycaenid butterflies of the Top End and Kimberley. *Northern Territory Naturalist* 20: 1-18.

A field key to the 41 species of lycaenid butterflies (Lepidoptera: Lycaenidae) that occur in the monsoonal Top End and Kimberley regions of north-western Australia has recently been published. The key is designed to complement Michael Braby's 2004 field guide to Australian butterflies and includes sketches of key characters.

A pdf on this paper is available on-line for free download at

<http://www.geocities.com/ntfieldnaturalists/journal.htm>.

Summary of methods and results of

Aspects of the biology and behaviour of *Ligia exotica* - the Wharf 'Louse'

Acknowledgements

Robyn Barden and Femke Schaaf, for organising CSIRO SRS 2007

Martyn Robinson, for supervising, providing information and equipment

George "Buzz" Wilson, for providing information

The Australian Museum, for providing a venue and equipment

Background and Methods

Sea-slaters, beach-lice or wharf-lice (*Ligia* spp) are commonly seen inhabitants of the intertidal zones of Australian sea-shores and estuaries. They are important members of the food chain as decomposers of tide washed detritus. *Ligia* spp. are often active by day and are known to have compound eyes and good vision – this latter is easily proven if you've ever tried to catch them.



As such it was thought they might make useful study animals for a CSIRO Student Research Project.



The Sea Slater *Ligia exotica*

Australia is recorded as having only 2 species - *Ligia exotica* (a cosmopolitan species) and *Ligia australiensis* (an endemic species) – but there are most likely to be other unrecorded species yet to be classified.

Examination of our *Ligia* collected from near Mrs Macquarie's Chair in Sydney Harbour, showed them to be *Ligia exotica*. This was determined according to a key created by Alison Green in 1974. According to this key,

the telson of the *Ligia exotica* should be an acute median angle and the eyes should have been less than one eye breadth apart. This is what was found.

There is a little about the biology of *L. exotica* in the literature from overseas sources, but almost nothing recorded from Australia.

Therefore the purpose of this series of experiments was to observe and investigate these *Ligia* specimens collected from Sydney Harbour and to determine their preferences for salinity, pH and food; ability to aggregate using chemicals or scent; amount of food consumed; predilection to certain amounts of light; their speed; their ability to change colour; and their intelligence based on the results.

We put the *Ligia* through a preferential setup consisting of plastic food containers with 25 mm clear plastic tubing linking 3 such containers together in a 'V' formation so that the animals placed in the middle containers had a clear choice of which tube to travel down to reach one of the two variables being tested. In the maze test a plastic fishing



Some of the test apparatus showing tube leading to two or more choices for the *Ligia* to pick from.



tackle box was used with gaps cut in the patricians to allow the animals access to various parts of the maze.

Five *Ligia* were used in each setup. All containers had a small amount of water in the bottom – harbour water was used in the control containers. Most experiments were left overnight and the presence/absence of the *Ligia* in each choice container was recorded in the morning.

During the time period in which the *Ligia exotica* were observed, other habits and behaviours were also noted.

Conclusions

Sadly within two weeks, almost all of the *Ligia* died. Several variables were tested, including temperature and food, but as none of these produced any effect the cause is still unknown. One theory for this die-off was that the *Ligia* were affected by the lack of salinity in the water of their tank, but this has yet to be proven. (N.B. a colony of the same species has been maintained and even bred at the museum for several months with varying salinity – seemingly with little effect – as these are at more or less constant temperature perhaps excess heat during the early summer was the cause? Ed.)

The following information has been provided by the experimentation and observations on *Ligia exotica*:

1. *Ligia exotica* appear to have no preference for salt or fresh water. They appear to be able to live happily in either.
2. Prefer the pH of harbour water over slightly acidic or basic water however they are able to tolerate slightly acidic water, but not basic (alkaline) water.
3. Prefer marine algae to freshwater algae, brown kelp or fish-food flakes. Even though brown kelp and green algae were both found at the same location, the *Ligia exotica* showed a clear preference for green algae. The *Ligia exotica* are also able to utilise their sense of smell to detect food that they can't see when this was hidden under opaque plastic caps.
4. Aggregate using chemicals. The *Ligia exotica* seem drawn to the rocks that had been previously used in other experiments. The most likely explanation is that they used scent to find the rocks they wanted – the ones that had been previously used by and therefore smelled of other *Ligia exotica* as opposed to unused rock.
5. *Ligia* can consume more than body weight in algae within 24 hours. *Ligia exotica* are able to process large amounts of food for their size. It is not known if they have fast metabolisms or if they derive little nutrient from their food.
6. Show no preference to light over shade. *Ligia exotica* as a whole seem to prefer darker light conditions to bright. They do however move into bright light and back into shade, possibly to raise their body temperature.



7. Move at an average of 1m/12.8secs. Tire quickly. *Ligia exotica* can move very quickly when scared or alarmed. This rapid movement seems to tire them quickly however.
8. Can change colour in different types of light. *Ligia exotica* have the ability to change their colour depending on the amount of light and or possibly heat (UV).
9. *Ligia exotica* are not especially inquisitive or responsive in an essentially 2D environment
10. *Ligia exotica* don't seem to display any problem solving intelligence tests/mazes. The maze was solved overnight in the first instance but took only 2 hours in the second run through.

Other Observations

Ligia exotica appear to be highly sociable animals, with complex communication systems involving uropod movement and antennae 'fencing'. Social interactions are frequent. There also appear to be hierarchies of sorts; some *Ligia exotica* have been observed pushing others off rocks, or walking over the top of others. Their impressive ability to jump at least 6cm with great force has not been explained as they seem to have no specialised jumping limbs. Their soft bodies make them unlikely candidates for the harbour rocks on which they live. In addition to this the following was observed.

They have the ability to regenerate lost legs, uropods and antennae. The lost limbs regenerate underneath the exoskeleton. They reappear when the exoskeleton is shed. *Ligia exotica* shed their exoskeleton in stages. They shed the back half first and then once the back legs and uropods have hardened, the front half is shed. It is thought that this is done to prevent predators from making them easy prey. By having half of their body still usable, they are able to walk, swim and run to safety.

Female *Ligia exotica* carry the young in a brood pouch that is located under the thorax. The eggs that she carries are a bright orange colour because the yolk is visible through the plates on the underbelly, and neither the eggs nor young receive nutrients from female.

Ligia exotica can walk backwards, however, it appears to be an undesirable movement for them.

Ligia exotica can also walk underwater without trouble.

Ligia exotica are able to raise their tails to remove unwanted water from their gills.

Marc Roddis & Frances O'Brien 2007

Photos by Marc Roddis

(edited by M. Robinson)

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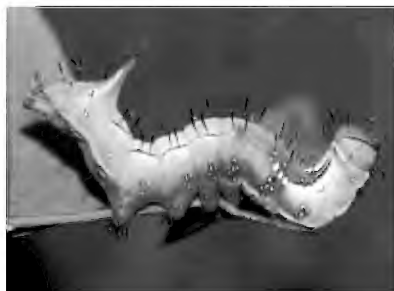


Anderson, D.T. "Plate 47" Diagrams. (No date, book title or publisher has been provided.)

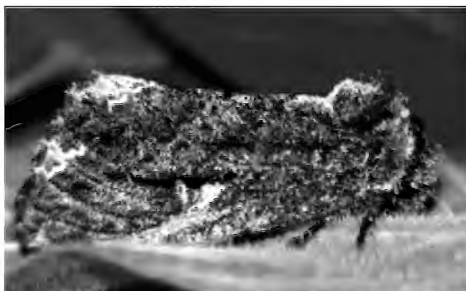
NEW HOST PLANTS

New hostplants for the notodontid moth *Neola semiaurata*

We recently found larvae of the moth, *Neola semiaurata* on *Cassia* sp. Paluma Range (Caesalpiniaceae), which currently is included in the taxon *Cassia queenslandica* and *Acacia fimbriata* form *perangusta* (Mimosaceae). They both went through successfully to adulthood, on these plants.



larva

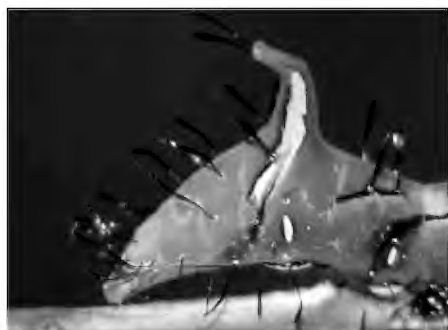


Neola semiaurata

adult

From our reading it would appear that these are new host plant records and in the case of the former a new family record. Ian Common (1990) has it recorded for other *Acacia*, *Albizia* (Mimosaceae) and *Dodonaea* (Sapindaceae).

Sue Pearce, the Nursery Manager for Fingal Head Coastcare, has reported the larvae of *Neola semiaurata* on *Cryptocarya triplinervis* (Lauraceae) which is also a new host record and new plant family record.



The winking eye spot



These spectacular looking larvae can vary in colour from brown to pinkish-brown to red. When disturbed they raise their rear end and display a pair of hidden eye spots which are contained in bilateral skin folds.

N. semiaurata is a member of the Notodontidae family of moths, the forewing is greenish-black with whitish-grey markings and the hindwing is yellow with a brownish suffusion around the edges. They have a wingspan of about 6cm.

Peter Hendry & John Moss

Photos by Peter Hendry

Two new hostplants for the Orchard Swallowtail, *Papilio aegus*

The BOIC publication “Butterfly Host Plants of Southeast Queensland and northern New South Wales” lists 25 larval food plants for the Orchard Swallowtail, all of which are in the family Rutaceae (Moss, 2005). The CSIRO’s “Butterflies of Australia” lists 28 native and 10 exotic species, all again in the Rutaceae (Braby, 2000).

In view of this apparent absolute preference for rutacids, it came as no surprise when I observed several final instar larvae devouring the young foliage of an Axebreaker



Coatesia paniculata

Tree (*Coatesia paniculata*) in riparian rainforest along the Perry River, west of Bundaberg in December 2005. Both *Geijera parviflora* (Wilga) and *G. salicifolia* var. *latifolia* (Broad-leaved Brush Wilga) are known hostplants and *C. paniculata* was formerly in that genus.

Leiper et al (2008) says of *C. paniculata* : It is an

“uncommon tree to 5m of drier rainforests. Crushed leaves (are) aromatic. The leaves (are) alternate, thick, glabrous, to 10cm (long), dark and glossy above, paler below. (Has) 3mm diam. 5-petalled white flowers in panicles in Spring.”

Since that observation, club member Anne Collins has found larvae on Axebreaker at her Mt. Cotton property in the Redlands and several of us, on the April 2008 Stanage trip, found larvae on Axebreaker in coastal vine scrub at Stanage Bay, north of Rockhampton (Forbes et al, 2008).



Another interesting larval food plant was noted by Mrs. Jan Sked, editor of the Society for Growing Australian Plants – Queensland Region – news bulletin and experienced amateur botanist. She found *P. aegeus* larvae on the rutacid *Medicosma cunninghamii* (“Pink Heart”) in her garden at Lawnton over recent years. The plant grows commonly in surrounding bushland and it may well be a preferred local hostplant for *P. aegeus*.



Medicosma cunninghamii

Leiper et al (2008) describe this species as “a shrub or small tree to 10m. Leaves opposite, hairless, to 15cm (long), aromatic when crushed. Lightly fragrant, 4-petalled white flowers to 25mm in axillary panicles throughout the year.”

J.T. Moss

Photos by Glenn Leiper

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AUSTRALIAN NATIVE BEES #15

WAR AND PEACE - PART 3

You no longer have to be concerned that I will exceed the length of Tolstoy’s masterpiece of the same name with this article, for this part brings to a conclusion my account of these aspects of stingless bee life.

Previously we have looked at the nature of fighting swarms and a couple of the recognised causative factors, but of equal concern to beekeepers faced with the distressing scene of their bees fighting is how to stop this needless loss of bee lives. Ideally we should intervene before the battle begins and at times the bees do give us



some indications that tensions are rising between opposing forces. As mentioned in Part 1, a relatively tightly formed swarm of stingless bees may quite suddenly appear and hold station in front of a particular hive for several hours. Sometimes pairs of bees can be seen to lock together in combat and drop out of the swarm, only to release each other in flight or on the ground and return to the swarm above. This may be the bees' way of testing out the strength of their opponents, and it is often the prelude to more serious conflict.

However, we often miss these preliminaries and don't become aware of the battle that has taken place in our garden that day until we return home in the evening and notice a large number of dead or dying bees lying on the ground in front of a hive. The cause of the loss is easily recognised by the experienced stingless beekeeper because of the number of dead bees that are still locked together in fighting pairs.



Scavenging ants benefit from the outcome of fighting swarms as they drag another fallen combatant from the battlefield.

It is not unusual for the swarm to reassemble the next day (and on subsequent days) to re-engage in their war of attrition so the question for beekeepers in that situation is what can they do to intervene and prevent further losses. Several techniques have been tried; some bringing about a temporary halt to hostilities while others can be more effective in the longer term. It may be necessary to combine two or more of these methods to try to bring about a more lasting peace.

Hosing the swarm with a garden hose or sprinkler can dampen their enthusiasm for war for a while, but I prefer to use one of those hand held mist spray bottles filled with water to which I have added just a few drops of eucalyptus oil. A fine mist sprayed over the swarm will usually cause it to disperse and the smell of the eucalyptus may help to disguise the scent of any pheromones they could be releasing into the air to call their colleagues to battle. A small piece of timber or a curtain of shade cloth or the like positioned in front of the entrance of the hive under attack (but not blocking the entrance) can confuse friend and foe alike and reduce the level of hostility.



These methods usually only provide a brief respite, but they may give you enough time to put in place more permanent ceasefire measures, before battle can be resumed. These other measures include splitting one or both of the hives involved in the conflict or removing the hive under attack to a new location a kilometre or more away.

However, in a crowded collection of stingless beehives there can be no guarantee that any of these methods will bring about total and lasting peace. You might recall that in part 2 of this series I mentioned that scientific sampling of fighting swarms revealed the presence of bees from hives other than the two main contenders in the fight. These bees represented a significant proportion of the attacking force indicating that once aggression has been unleashed it may trigger belligerence in otherwise peaceful neighbouring hives.

Having described fighting swarms in such vivid detail to date, it is probably appropriate at this juncture to include a few words of reassurance for the novice beekeeper. While the outcome of fighting swarms looks dramatic and there is no doubt that the loss of so many foragers must weaken the hives involved, it is unusual for such behaviour to result in the total loss of a colony.

Fortunately, peace reigns for most of the time in the stingless bee world and during these long periods of détente it is not uncommon to see another type of swarm build up and hover in the vicinity of a particular hive. Unlike the tight belligerent formation seen in fighting swarms these bees adopt a looser lazier pattern to their flight. For you see, fighting swarms are made up exclusively of female worker bees, while these more peaceful assemblies are drone swarms. Comprised entirely of male bees, the participants of these swarms are only interested in making love – not war.



Trigona carbonaria drones sometimes cluster on thin twigs at night.

Presumably pheromones released by emerging virgin queens cause drones to assemble in significant numbers in the vicinity of hives that may be intending to re-queen or to establish a new colony. Their patience seems to know no bounds. During fine weather these swarms will form up each morning and take up station in the same place for days or even weeks on end. Cruising aimlessly about in the warm sunshine



while waiting for the object of their desire to emerge may seem fairly idyllic, but it's not all beer and skittles for these ardent suitors.

Those from more distant hives are forced to camp out if they don't want to miss the action next day and can be seen at night clustered on the thin branches and twigs in the vicinity. When the queen finally emerges for her mating flight it is believed that she flies quickly upwards on a testing course to ensure that the weaker males fall by the wayside and that only a drone with the 'right stuff' will father her future daughters. At such times the drones will leave their station en masse and sometimes, after an initial wave like action, the swarm will climb steeply, only to resume its previous position some time later.

A stingless bee queen will engage in only one mating flight in her life and DNA evidence indicates that during that event she will mate with only one drone. However, the remaining bachelors in the swarm will continue their now futile patrol until predators and exhaustion take their inevitable toll.

John Klumpp

Photos by John Klumpp

AT THE LIGHT TRAP

A First Time Encounter

Since I first read about the moth family Alucitidae I have been fascinated by these feathery little critters. Known as Many Plume Moths. Their wings are deeply divided and take on the appearance of feathers.

This specimen came to a light trap at my bush block west of Bundaberg. It was the first time I had set up the trap in amongst the dry vine scrub along the river. This was my first encounter with a moth from the Alucitidae family.

In Australia, the family is represented by six named species with others yet to be described. I was unable to put a name on my specimen, but as all the known Australian species belong to the genus *Alucita*, it's a fair bet mine does too. It is a very small moth with a wingspan of only 7mm. If anyone can name it I would be happy to hear from you.



Alucita sp.

Photo by Peter Hendry

Peter Hendry



Saturniidae

“Look out, bats!” was the cry at a recent light trap 27km N.W. of Ingham. It was two male *Hercules* moths, *Coscinocera hercules*, followed in quick succession by three more. With a rather ungainly flight they would circle the light then slam themselves into the ground, from which, some time later, they would rise again and repeat the process. After a while they settled completely and at the end of the night one was placed on the wall of a shed, where it remained all night. It was still there when we left at about 8am. The

female *C. hercules* is the largest Australian moth, by wing area, and one of the largest in the world. I was pleasantly surprised to see these moths, as Ian Common in his work, *Moths of Australia*, states that adults are on the wing from January to April with a few emerging at other times of the year. To see them in October in these numbers was wonderful. Further north near Innisfail a single male came to light and one again at Babinda. On the return trip, about 12km from the Ingham site, a further five specimens came to light, including one female. Unlike the first occasion these specimens were more inclined to land on the light sheet and I managed to photograph four on the sheet at once.

C. hercules is a member of the Saturniidae family of moths that belong to the superfamily Bombycoidea. Worldwide the Saturniidae contains approximately 1861 species in 162 genera and nine subfamilies (Regier et al.). In Australia we are blessed with only about 15 species, all belonging to the one subfamily Saturniinae. Unlike

most moths, the Saturniidae lack the coupling devices known as the frenulum and retinaculum, which locks the fore and hind wings together in flight. This might explain the ungainly flight of the large *C. hercules*.

The first Saturniidae I had come to light at home, Sheldon (near Brisbane) is a member of Australia’s largest genus, *Opodiphthera*. The moth was a female Emperor Gum Moth, *Opodiphthera eucalypti*. She came to light on the night



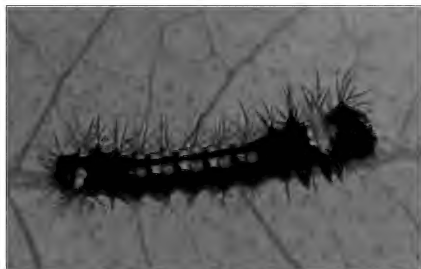
Coscinocera hercules male



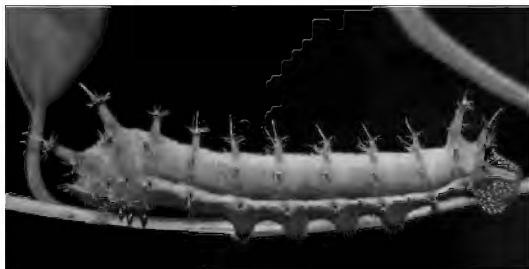
Opodiphthera eucalypti male



of the 22nd September 2007 and blessed me with three eggs, two of which went through to pupation and remain in that state today. This was followed by two males on the following night, a further male on the 28th September and another female on the 16th November 2007. I have also had one male come to light at my bush block west of Bundaberg.



first instar



Opodiphthera eucalypti larvae

final instar

The larvae of this species, as the name implies, feed on eucalypts. It has also been recorded on the introduced pepper tree, *Schinus molle* and silver birch *Betula pendula* (Common, 1990). In their later instars the larvae are green with a cream stripe along the side and covered in blue-tipped orange tubular structures, known as scoli, from which project several setae or hairs.

Other *Opodiphthera* that have come to light at Sheldon include the species *O. helena*. The first male appeared on the 19th January 2008 and one more on the 8th February 2008 and as recently as the 7th November 2008 another male appeared. At Deepwater, south of Tenterfield NSW, *O. helena* has appeared on two occasions. On the 27th September 2008 I had seven arrive in the one night! *O. helena* larvae also feed on



Opodiphthera helena male



Opodiphthera loranthis male



Opodiphthera astrophela male



Syntherata janetta male



eucalypts and have also been recorded on Birch. The Mistletoe Emperor Moth, *Opodiphthera loranthi*, has made one appearance at Sheldon on the night of the 22nd February 2008. John Moss and Ross Kendall have also recorded it on my bush block west of Bundaberg. The larvae of *O. loranthi* feed on mistletoe (see article this issue). The final *Opodiphthera* I have had come to light is *O. astrophela*. It was in rainforest NW of Murwillumbah on the night of the 16th October 2007. The males of this species are yellow while the females are reddish-grey. The larvae of *O. astrophela*, are known to feed on *Flindersia*, *Alphitonia* and *Callicoma*.

The only other Saturniidae I have had come to light is *Syntherata janetta*. This first occurred on my bush block west of Bundaberg on the 27th January 2008. On a recent trip to North Queensland in October 2008, it came to light on several occasions between Mackay and Babinda. *S. janetta* is a variably coloured species with adults in yellow (with variable brownish markings), reddish and grey. The larvae have been reported on a large array of plants, the families of which include, Rutaceae, Euphorbiaceae, Myrsinaceae, Rubiaceae and Podocarpaceae (Common,1990).



Colour forms of *Syntherata janetta*

Peter Hendry

Photos by Peter Hendry

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Correction:

Ed.: In issue #50, p.28, At the Light Trap, I duplicated a photo of a moth in the *Anthela acuta* group. The photo which should have appeared was of this moth, *Munychryia senicula*. My apologies Peter.

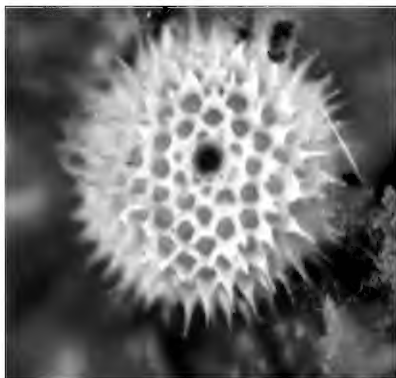


UNDER THE MICROSCOPE

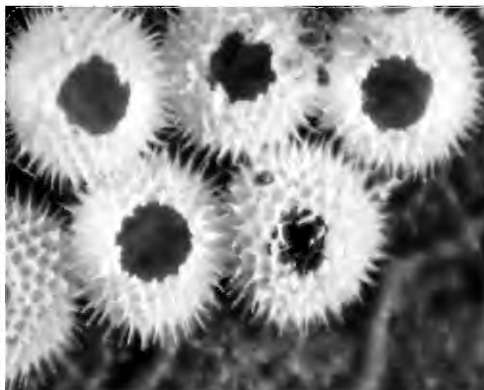
Whilst trying to photograph the egg of *Hypochrysops delicia duaringae*, I was fortunate enough to capture images of a larva hatching. These photos show the progression from complete egg, to the larva eating a hole through the micropyle on the top of the egg, crawling out and then posing for a photo.

Bob Miller

Photos by Bob Miller using club camera/microscope



Complete egg of
Hypochrysops delicia duaringae



Larvae beginning to hatch



Larva emerging from egg



First instar larva of *Hypochrysops delicia duaringae*



“MOTHOLOGY: Discover the Magic - Moths and Moth Art from the World Heritage Listed Wet Tropics of Queensland, Australia” by Buck Richardson.



This is a book in two parts. In the first, Buck describes his introduction to moths and displays images of some 360 live moths. The second part illustrates the computer-generated artwork Buck has created from his moth images. It is my intention to comment on the first part and for Lois Hughes, our resident artist, to comment on the second.

In the introduction Buck first talks about the World Heritage listed Wet Tropics, followed by a section titled “Gone Nothing”. In this section I found many parallels with my own experience into the introduction of the moth world. I particularly enjoyed how he went about naming moths before discovering their true name! Hawk moths were known as “Concordes” and names like “big rich brown with orange middle” and “two-tone green” were used. My imagination does not carry that far and any moth I recognise but cannot remember its name, I just call “Me Mate”! By the end of a night’s nothing I can have a light sheet full of “Me Mates”, all different and belonging to different families!! Buck then goes on to talk about “Taxonomics” followed by images of some of Australia’s most beautiful moths.

While not a scientific work, it is a wonderful resource of moth images, all with scientific name, family and sub family where applicable. I noted that in a review of this book by Dave Britton, for the Society for Insect Studies, he mentions an error. On page 13 the moth labelled *Zelleria isopyrrha* Arctiidae Lithosiinae, is in fact *Calamidia hirta*. *Z. isopyrrha* belongs to the family Yponomeutidae. All of the images were taken at Kuranda, North Queensland but many of these moths have come to light here at Sheldon, South Queensland and many will occur further south.

I would recommend this book to any with an interest in our natural history or all things beautiful. My only criticism is that I am not a fan of the landscape format in which it is presented.

Peter Hendry

Review of Buck Richardson’s book “Mothology”

“Vision sets you free from the limitations of what the eyes can see and allows you to enter into the liberty of what the heart can feel. It is vision that makes the unseen visible and the unknown possible.” (This quote is taken from the Foreword of “The Principles and Power of Vision” by Dr. Myles Munroe.)



Buck Richardson has tapped into this source, which sets his book and art works above the ordinary. As my assignment is to comment on the artistic merits of his work I will leave the correctness or otherwise of the scientific aspects of it to those considered qualified to do so. Time will reveal the truth of those theories and assumptions.

In the first 11 pages, Buck leads us on a delightful journey of discovery and reaches out with refreshing enthusiasm, seeking to draw us into this secret and mysterious world of these creatures of the night, perhaps hoping that we too will be captivated, obsessed even, with “mothology”. His quirky sense of humour is evident throughout the book as well as in his art works, eg. his substitution of “Forward” with “Forewing” sets the tone from the very beginning.

He gently challenges us to not only conserve but to actually celebrate and pursue life, not exploiting, but living harmoniously with and being good “care-takers” of the land we have been entrusted with, for the benefit of all. He leads by example.

From pages 12 to 39 his stunning moth photos are a feast for the eyes. Decoratively displayed (and named) many on black backgrounds, some merging mysteriously, as if still camouflaged by the blanket of darkness from which they came. My very favourite is of a stunning Hawk Moth, *Daphnis protrudens*, on page 35. Coming a close second is the large *Spirama recessa*, with huge eyes, looking like “a man with a moustache”!

On pages 40 and 41 Buck reveals that his interest in moths began from a photographer’s point of view and I quote –

“When each of my images came up on the computer screen for the first time I was constantly amazed and delighted at the variety of these truly beautiful creatures. The patterns on their wings, simple or complex, bold or tonal in colour, always perfectly symmetrical were captivating ... and stimulating. It was not long before I was manipulating them as elements in grander patterns which I called mothology.”

In the next 24 pages the culmination of those creatively manipulated images are gloriously reproduced on spheres, mandalas and stars, a mobile of mandalas in jeweled cases, boldly patterned silk scarves aptly titled “Silk Moths”, limited and open edition Giclee prints and posters boldly and brightly patterned. At first glance you notice the wonderful designs and colours but as you continue to look you realize that each one is composed of a myriad of moth images and the harder you look the more you find. A truly joyful experience!

The book itself is beautifully laid out with great attention to detail, eg. the moth outline enclosing the page numbers is a nice touch. The visual impact is simply stunning.



Not for Buck the dead specimens of trophy moths, encased, but gloriously alive creatures, reproduced, to frame and hang or proudly wear, intricate and beautiful, humorous and inspirational. Discover the magic for yourself.

Lois Hughes

Ed.: “Mothology” is available from info@leapfrogoz.com.au or LeapFrogOz, PO Box 225, Kuranda, Qld. 4881 or from BOIC for \$29.95 postage free within Australia.

YOU ASKED

I photographed this interesting katydid in dry rainforest in a gorge at Ormeau. It was trying to mimic the leaves it was hiding amongst, and was only about 40 cm from the ground. It was pointing down with its antennae and pair of front legs combined to make it look like a leaf petiole. It refused to budge when I was examining it and only started to get animated when I picked it up. The abdomen had bright yellow colouration on it, but unfortunately it wouldn't keep its wings up for me to photograph that part of its anatomy. Its body length was about 7 cm. Am I correct in guessing it's a katydid?

Glenn Leiper



John Moss checked an authoritative book by David Rentz called “Grasshopper Country” and concluded that the insect was a true Katydid (family Tettigoniidae, sub-family Pseudophyllinae, tribe Simoderini). There is a similar looking insect in plate 127 of p.102 of “Grasshopper Country. We are hopeful that David will be able to give us an actual genus and species name.

WWW TO WATCH

Recently Catalyst, on ABC TV, presented a segment on Lady Birds in which they mentioned an excellent site -

<http://www.ento.csiro.au/biology/ladybirds/ladybirds.htm>

WHAT INSECTS ARE THESE?

In issue number 50 we asked “What Insects are these?” The answers are -





Photo by Graham Forbes

The name of the insect is :- *Cocytia durvillii* (Bois 1828)

This insect, which has a 7cm wingspan, is a moth belonging to the large family Noctuidae. It is an uncommon lowland species with a distribution range from the Moluccas in Indonesia to Papua New Guinea.

This specimen was taken in Lae P.N.G at light just after dusk and this together with the clear wings that are similar to those of the day-flying hawkmoths, suggests that it is crepuscular in habit if not perhaps a day-flyer.

Graham Forbes



Photo by Ross Kendall

This photo was taken in January 2008 at Upper Thane Creek west of Warwick. The pupa of the Silky Azure (*Ogyris oroetes*) with its attendant ants was found under bark at the base of the Box Mistletoe (*Amyema miquelii*) parasitizing a eucalypt. I have observed the same species of ant tending larvae of the Broad-margined Azure (*Ogyris olane*) in the same area.

Susan Wright of the Queensland Museum has contributed this information about the ant: "It is a member of the genus *Meranoplus* but as for species they are yet to be completely worked on so it is too hard for us to say. Possibly someone overseas could tell but the real expert died last year before completing his work. What he had completed was published but otherwise the genus is in limbo at the moment."

Ross Kendall

OTHER GROUPS' ACTIVITIES

Butterflies and other Bugs in Brisbane Project

A total of 23 activities were conducted across Brisbane in 2006 and 2007 with 246 people participating.

The topics covered were:

- 1) Butterfly Wander (5 walks) by Frank Jordan and Helen Schwencke
- 2) Dragonflies in Brisbane (4 field trips) by Ric Natrass
- 3) Ants in Brisbane (4 walks), by Dr Chris Burwell, Queensland Museum
- 4) Insects at Night with Light (3 activities), by Michelle Larsen
- 5) Cicadas, Crickets and other Critters (2 talks), by Michelle Larsen
- 6) Native bees (1 talk & 1 walk), by John Klumpp
- 7) Beetles, ants and other invertebrate groups (3 talks), by Drs Geoff Montieth and Chris Burwell, Queensland Museum



Unfortunately, the project ran at a time of drought and insects and other critters weren't in abundance. A significant find along Oxley Creek was a very large, buttressed Caper, *Capparis arborea*, which is 10 metres tall and of a very significant girth. This tree puts paid to the idea that *Capparis arborea* is a small tree, as it is often described.

Thanks goes to Daphne Bowden from the Club and Brisbane City Council's Habitat and Catchment Officers for their support of this project. A copy of the report is available from cla@dovenetq.net.au

Helen Schwencke

Project Manager, Community Learning Initiatives

BUTTERFLY AND OTHER INVERTEBRATES CLUB PROGRAMME

A Visit to Mt. Cotton Rainforest Gardens

What: A visit to the mountain top above the Gardens, with panoramic views, from the east the bay islands and Mt. Coot-tha and Mt Tamborine to the west.

When: **10 am sharp Saturday 7th February, 2009.**

Where: Mt. Cotton Rainforest Gardens, 196 Mt. View Road, Mt. Cotton.

Bring: Walking shoes, hats, camera and refreshments if desired. \$2.50 entry fee.

More Info.: We can expect to see rare plants amongst the native vegetation, many of which are butterfly host plants. During our last visit we saw many local butterflies hill-topping. An entry fee is required for public liability cover. Assemble at the roadside parking area before the Gardens' entrance where entry fee will be collected. We will then drive up the mountain together. As this area is locked, late comers may have entrance blocked. Devonshire teas and light refreshments are available for purchase in the Gardens.

R.S.V.P.: Please phone Lois on 3206 6229

Planning and Management Meeting

What: Our planning meetings are informative and interesting. As well as planning our activities we share lots of information. All members are welcome as this activity is also a general meeting of members.

When: **2pm Saturday, 21st February, 2009**

Where: Peter Hendry's home at Sheldon – address supplied on RSVP

R.S.V.P.: Peter on 3206 0048 or Daphne 3396 6334 daphne.bowden1@bigpond.com

Garden Visit to "Jak's" Place

What: Visit to Jak and Ginny Guyomar's acreage property at Gumdale to view their garden planted up with butterfly host plants. If we are lucky we may see both Jak's extensive butterfly collection and vintage car collection.

When: **10am Saturday, 14th March 2009**

Where: 789 Grassdale Road, Gumdale. Park in street.

Bring: Snacks, drinks, hat and sunscreen. Tea and coffee will be provided and, knowing Ginny, a little treat as well!

RSVP.: Register with John Moss on 07 3245 2997 and for further information on how to locate "Jak's Place."

If you plan to attend one of the above events, please contact the person indicated in case, for some unforeseen circumstance, the event has had to be postponed or cancelled.



DISCLAIMER

The Magazine seeks to be as scientifically accurate as possible but the views, opinions and observations expressed are those of the authors. The Newsletter is a platform for people to express their views and observations. These are not necessarily those of the BOIC. If inaccuracies have inadvertently occurred and are brought to our attention we will seek to correct them in future editions. The Editor reserves the right to refuse to print any matter which is unsuitable, inappropriate or objectionable and to make nomenclature changes as appropriate.

ACKNOWLEDGMENTS

Producing this magazine is done with the efforts of:

- Those members who have sent in letters and articles
- Lois Hughes who provides illustrations including the cover
- Daphne Bowden who works on layout, production and distribution
- John Moss, Martyn Robinson, Don Sands, Chris Reid, Graham Milledge and David Lane for referencing and proof reading of various articles in this issue of the magazine
- Printing of this publication is proudly supported by
Brisbane City Council



We would like to thank all these people for their contribution.

Dedicated to a better Brisbane

ARE YOU A MEMBER

Please check your mailing label for the date your membership is due for renewal. If your membership is due, please renew as soon as possible. **Membership fees are \$20.00 for individuals and \$25.00 for schools and organizations.** If you wish to pay electronically, the following information will assist you: BSB: **484-799**, Account No: **001227191**, Account name: **BOIC**, Bank: **Suncorp**, Reference: your membership no. and surname e.g. **234 Roberts**.

Butterfly and Other Invertebrates Club Inc.
PO Box 2113
RUNCORN Q. 4113

Next event – A Visit to Mt. Cotton Rainforest Gardens, Saturday 7th February, 2009 (See Programme for details)

